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## Imaging

### IMPAIRED LEFT VENTRICULAR APICAL ROTATION AND UNTWISTING IN PATIENTS WITH PSORIASIS ARTHRITIS: AN ASSESSMENT BY TWO-DIMENSIONAL SPECKLE TRACKING

ACC Moderated Poster Contributions

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**Background:** Patients with psoriasis arthritis (PsA) have an increased risk of developing early myocardial impairment. The aim of this study was to evaluate three dimensional left ventricular (LV) mechanics in the long-axis, short-axis and circumferential planes in PsA patients and their relationship to disease factors.

**Methods:** Fifty patients with PsA and 30 controls underwent 2-dimensional speckle tracking echocardiography. All participants had no clinical evidence of cardiovascular diseases. Thirty patients had only PsA without any cardiovascular risk factors. Global longitudinal, apical circumferential and radial strain, apical rotation, untwisting ratio at 25% duration and maximal untwisting rate during early diastole were measured.

**Results:** All patients had normal LV ejection fraction but significant impaired long-axis and short-axis strain, rotation and untwisting compared to controls. Intriguingly, patients with only PsA and no risk factors showed significantly lower apical circumferential strain, rotation and untwisting although global longitudinal strain was preserved. (Table) Moreover, the apical rotation was negatively correlated with PsA disease duration ( $r=-0.330$ ,  $p=0.033$ ) after adjusting for age, blood pressure and LV ejection fraction.

**Conclusions:** Early myocardial impairment can be detected in PsA patients, without any obvious cardiovascular risk factors, which primarily affects circumferential function and twist, and which is related to disease duration.

	Controls N = 30	PsA N = 50	PsA only (Without cardiovascular risk factors) N = 30	PsA vs. Controls p-value	PsA only vs. Controls p-value
Age, years	46.6±10.7	47.2±12.0	45.2±12.8	0.814	0.663
Gender, F/M	15/15	29/21	18/12	0.486	0.436
Systolic BP	119±12	125±15	119±9	0.062	0.998
Diastolic BP	71±9	76±8	74±8	0.007	0.107
LV mass index, g/m <sup>2</sup>	73.9±15.6	77.9±15.1	74.3±13.9	0.281	0.991
LV ejection fraction, %	68.1±4.9	63.7±5.8	66.0±4.8	0.001	0.110
Speckle tracking					
LV global longitudinal strain, %	21.0±2.4	19.6±3.1	20.4±2.7	0.047	0.346
apical radial strain, %	37.2±18.2	32.9±16.9	34.2±18.3	0.336	0.556
apical circumferential strain, %	32.1±6.0	21.9±4.7	21.9±5.1	<0.001	<0.001
Rotation, degree	18.3±6.2	9.5±3.7	9.2±4.0	<0.001	<0.001
Untwist ratio at 25% duration, %	46.6±19.9	35.0±14.7	35.5±16.3	0.007	0.033
Maximal untwisting rate during early diastole, degree/s	90.7±32.2	60.3±29.5	61.0±31.0	<0.001	0.001